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BULLETIN . . . .

No. 1

Commonwealth of Massachusetts

STATE FORESTER'S OFFICE

# FORESTRY IN MASSACHUSETTS

BY

ALFRED AKERMAN, M.F.

STATE FORESTER

THIRD EDITION, REVISED



BOSTON

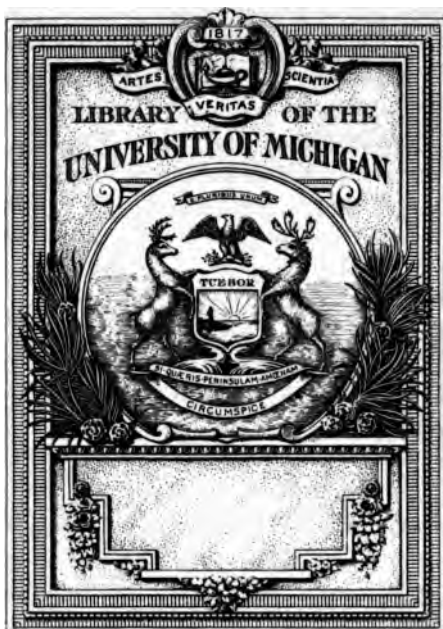
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# MASSACHUSETTS STATE FOREST SERVICE

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## FORESTRY IN MASSACHUSETTS

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### PART I

#### INTRODUCTION

“Forestry is the science and art of forming and cultivating forests; the management of growing timber.” Forestry is distinguished from arboriculture by the fact that arboriculture deals with trees as individuals, while forestry deals with trees in forest stands. It is distinguished from landscape gardening by its different point of view. Landscape gardening often deals with trees singly and in groups, but always with the purpose of producing artistic effects; if any timber or wood is produced, it is merely incidental. Forestry, on the other hand, is chiefly concerned with the economic production of merchantable wood and timber.

The considerations, however, which make forests desirable are many; and they vary to some extent in the different sections of a country, and also to some extent in the same section, according to local needs and the desires of individual owners of woodland. The protection of the soil, the conservation of moisture, and the preservation of the natural beauty of a country-side are often important considerations, as well as the production of forest supplies.

As a rule, if forestry is practised for commercial purposes, if the land is made to produce continuously the greatest amount of merchantable material with the least possible expenditure, the protective and beautifying functions of the forest will also be performed.

*Importance of Forestry in Massachusetts*

Improved management of woodlands in this Commonwealth is of great importance. The United States Geological Survey estimates that 2,688,000 acres, or 50 per cent., of the area of the Commonwealth is in woodlands, the total area being 5,321,600 acres. As there is a considerable area of waste land, old fields, abandoned pastures and the like, a part of which is capable of bearing forest growth, and which was not included in the above classification, the amount of land available for forest purposes must be in the neighborhood of 3,000,000 acres. At present much of this area is occupied with scattering and decrepit growth, and much of it has been burned over and otherwise abused until its productive capacity has been greatly reduced. The United States census for 1900 gave \$3,626,515 as the annual output of woodlands in Massachusetts. This is not the net production: it is the value of logs, ties, posts, firewood, etc., delivered. The 3,000,000 acres available could with proper management produce, and produce continuously, several times the present output. By neglecting to practise forestry, the owners of woodlands are allowing a great resource of raw material to go to waste.

In the mean time, our manufacturers are going to Canada, to the south, the middle west, and even to the Pacific coast, to get their supplies. And they are sending money with their orders, that might go to owners in Massachusetts and be spent here.

Wood is always needed. In spite of the many substitutes that have been found for it, wood is more in demand to-day than ever before. The amount of wood annually consumed is constantly increasing, although the amount relative to other raw materials has decreased. And the prices paid for wood supplies are constantly increasing.

So, aside from other considerations, forestry, from an economic point of view, is of great importance to land owners, to manufacturers, and to the public.

### *The Fundamentals*

There are five fundamental conditions that must precede or accompany the permanent development of forestry in any country. The first is the presence of a considerable area of non-agricultural land which is capable of bearing forest growth; the second is a good market for forest products; the third is the presence of good transportation facilities; the fourth is an adequate system of protection from fires; and the fifth is a fair method of taxation for forest lands.

#### *(1) Non-agricultural Land*

In another connection it was stated that probably 3,000,000 out of 5,321,600 acres in the Commonwealth are available for forest purposes. They are by nature non-agricultural lands; they are not suitable for other than forest purposes, and therefore ought to be in permanent forest.

#### *(2) Good Markets*

The second condition, that of a good market for forest products, is also fulfilled in Massachusetts. All through the State there are numerous cities, towns and villages, and wherever these are found there is a demand for the products of the forest. Where building is going on, there is a call for lumber; where manufacturing is going on, wood is being used somewhere in the process of manufacture or in crating the product for shipment; where there are railroads, there is a demand for ties; where there are telephone and telegraph lines, there is a demand for poles; and where farming is going on, there is a demand for lumber for outbuildings, posts for fences and firewood for heating and cooking purposes. The intensiveness of forest cultivation depends largely on the market for forest products, and the market for forest products depends largely on the density and distribution of population. There is only one State in the Union that has a denser population than Massachusetts, and, although congested around Boston, there is no large section of the State that is not settled. The distribution of cities may be taken as an

illustration of the point just made. In the extreme western part of the State are North Adams and Pittsfield; in the Connecticut valley, Northampton, Holyoke and Springfield; in the central part, Fitchburg and Worcester; and in the eastern part, Lowell, Lawrence, Haverhill, Greater Boston, Brockton, Taunton, New Bedford and Fall River. There is considerable manufacturing in all these places. Moreover, manufacturing is going on in almost every small town. And where there is manufacturing, there is always a demand for wood in various forms. When we add to these demands the demands of the railroads, telephone and telegraph companies and of the farmer for his fences and buildings, it is readily seen that a market for wood and lumber is not far to seek in any considerable part of the State. No state in the Union has better markets.

### (3) *Transportation Facilities*

The third condition, that of easy transportation from place to place, is also fulfilled in Massachusetts. If a glance be taken at the map of the State, it will be seen that its surface is traversed by a network of railroads and wagon roads. It is true that many of these wagon roads are not what they should be, and it is well that we have a Highway Commission to make them better; but when our roads are compared with those in most other States, Massachusetts does not suffer by the comparison.

Transportation has an important bearing on forestry. Forest products are as a rule bulky, and their transportation is consequently a considerable item in the cost of marketing; and whether this or that measure can be adopted in the woods often depends on the question whether this or that bulky article can be carried to market with a margin of profit, or not. If the transportation facilities are good, much more intensive forestry can be practised than otherwise.

### (4) *Protection from Fire*

At present the Commonwealth does not have an adequate system of protection from forest fires. In saying this, it is not the intention of the writer to criticise adversely the fire-

wards nor the district police to whom they report through the selectmen. The fault is in the system, rather than in its personnel.

Fire is the greatest enemy of the forest. It not only injures and destroys merchantable timber, but it often destroys for a number of years the conditions which are conducive to growth, so that the damage done is more than the injury to or the destruction of the merchantable part of a stand of trees.

We raise a hue and cry about the "devastation" wrought by the lumberman; we say that he is cutting all he can get out of his woods, without regard to future crops. But in many cases the lumberman has an excellent reason for cutting as severely as he does, and that reason is, that he would rather have his money in a bank than to have it in the woods exposed to fire. If we want the lumberman to act differently, we must meet him half-way; we must protect his crop to the extent of making it possible for him to insure it at reasonable rates, that do not exceed the rate of growth of the crop.

The present conditions must be improved if forestry in this State is to make rapid and substantial progress.

#### (5) *A Fair Method of Taxation*

There is a great deal of dissatisfaction with the present method of assessing taxes on forest lands. This dissatisfaction is shown by the laws that the different States are enacting along these lines. Pennsylvania has a rebate system; if a private owner will fulfill certain conditions, he receives a portion of his taxes back after they have been paid. Connecticut, Massachusetts and other States also have special laws in regard to the taxation of certain classes of woodlands. For the most part these laws are not operative, because they were not carefully thought out. They serve to show the feeling of discontent with the present system, but they do not furnish a satisfactory solution of the problem.

The system, now generally in vogue, of assessing forest lands for purposes of taxation, provides for the taxation not only of the land but of the growing crop as well. A farmer's wheat crop is not taxed while it is growing. An orchard or

a vineyard yields returns in a very few years, but the wood lot is oftentimes taxed for years before any returns come in. Suppose, for example, a piece of land is planted to white pine, which is to be cut fifty years from now. As soon as that pine has reached a size at which it adds any value to the land, the property is assessed accordingly until it is cut, when it is again put back to the value of the land without the crop. In other words, the present system provides for the taxation of a raw material not only once but many times. When this raw material is so universally used in our manufactures, such heavy taxation is of doubtful expediency.

So there is dissatisfaction for two reasons: first, the crop as well as the land is taxed, which is not the case with ordinary agricultural crops; and, second, the crop is taxed while it is not bringing in anything, and therefore the owner is not in a condition to pay taxes on it.

Pursuant to a resolve of the General Court of 1905 a committee to investigate the problem of taxing forest lands was appointed. The committee consisted of the Tax Commissioner, the chairman of the Harbor and Land Commission, the State Forester, three farmers, and a real-estate expert. The committee embodied its findings in a report which was printed as House Document No. 134. In order to make this report available for general distribution it has been reprinted as Bulletin No. 3 of this office, and may be had on application.

A partial consideration of the recommendations contained in this report was given this year, and it was referred to the General Court of 1907 for further consideration.

It is hoped that a satisfactory solution of this most perplexing problem will be found. Indeed, it must be found before private owners will be disposed to allow their timber crops to stand long enough to reach maturity.

### *Recapitulation*

These five conditions, therefore, are fundamental to a permanent and successful development of forestry: (1) the presence of a considerable area of non-agricultural land that is capable of bearing forest growth; (2) a good market for

forest products; (3) good transportation facilities; (4) an adequate system for protection from forest fires; (5) a fair method of taxation of forest lands. Three of these conditions are fulfilled in the Commonwealth, but an improvement is not only desirable but necessary in fire protection and the method of taxation.

## PART II

### THE COMMONWEALTH'S FOREST POLICY

The General Court of 1904 established the office of State Forester. A brief review of the work of the office will show how the State is going to work to make our forests more productive and to increase their area.

#### *Lectures at the Agricultural College*

The act establishing the office of State Forester mentions several lines of work, but leaves the execution of all except one to his discretion. The one exception is that he shall give a course of lectures on the art and science of forestry to the students at the Massachusetts Agricultural College at Amherst. The faculty of the college, acting under instructions from the trustees, have arranged the course as an elective for graduate students, seniors, and the short-course men who are there for the winter months only. Twenty-nine men elected the course in 1905, and fifty-four this year.

#### *Public Lectures*

Since taking up the work in August, 1904, the State Forester has given, in addition to the course at Amherst, fifty-six public lectures, talks, and addresses on various phases of forestry. These have been under the auspices of granges, farmers' clubs, improvement associations, and other interested organizations. Invitations to speak will hereafter be accepted only in the months of December, January, and March; the rest of the year will be reserved for work in the woods and other duties. These public lectures are undoubtedly conducive to the perpetuation, extension, and proper management of forests in the Commonwealth. Ap-

plication for lectures is made on blanks which are furnished on request, and a copy of which is given below : —

TOWN OR CITY

DATE

I hereby apply to the State Forester for a lecture on forestry, with special reference to

at \_\_\_\_\_, on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_  
 at \_\_\_\_\_ o'clock \_\_\_\_\_, the public to be invited; and to  
 cover the traveling expenses incident to accepting this application  
 I agree to deposit \_\_\_\_\_ dollars with the State Forester on  
 or before \_\_\_\_\_ 19\_\_\_\_

Signed

The above application is accepted on the conditions named above.

Signed

*State Forester*

N.B. — Any unexpended balance, together with an itemized statement of expenses, will be promptly returned.

### *The State Forest Nursery*

It is specified in the act creating the office that the State Forester may establish and maintain a nursery for the propagation of forest tree seedlings on such lands as the trustees of the Massachusetts Agricultural College may set aside for that purpose on the college grounds at Amherst. The stock raised in this nursery is to be furnished to private owners upon such terms as the forester may fix, subject to the approval of the Governor and Council.

It would be a mistake for the State to go into the wholesale raising of seedlings for public distribution if the nurserymen of this State will take up this line of business. Heretofore the nurserymen of this State, and in fact most of the nurserymen of the entire country, have been engaged in raising ornamental and shade trees at prices which prohibit their use in forest plantations; and it is likely that the nurserymen of this State will not care to take up a different line of work.

In the mean time, a small nursery has been established, principally as a part of the course in practical forestry at the college. And if the nurserymen do not take up the production of stock for forest planting the nursery will be expanded as circumstances may warrant.

In any event, the output of the nursery will be disposed of only to bona-fide forest planters who are operating under planting plans that have been approved by the State Forester. It is not necessary that the State Forest Service prepare the plans, but it is necessary that a satisfactory plan be drawn up, and a copy of it be placed on file with the State Forester.

#### *Co-operation with the Owners of Woodlands*

Another line of work, which is mentioned in the act, is practical assistance to private owners in the management of their woodlands. This is perhaps the most important line of work that the State has taken up; and as much of the time of the State Forest Service as can be spared from other duties will be devoted to it; for it is believed that the forest problems of this State are to be solved largely by private owners. While the State has acquired some lands for park purposes, and a part of these lands can be used to grow timber, and while the State will probably follow the example of other States in the acquisition of lands to be managed as State forests, still, the greater part of the woodlands in the Commonwealth is and always will be in the hands of private owners. It is therefore very important that these private owners should be encouraged to practise improved forestry methods. The State has taken the position that it will furnish to the owners the services of experts, and leave the owners to make use of their services or not, as they see fit. This is the American way of doing things, — give the citizen the help he cannot readily supply himself, and then let him do as he likes about accepting the State's help. It stands out in marked contrast with the drastic forest measures adopted by foreign governments, which limit to an unwarrantable extent the rights of the private owner.

Those who desire advice in the management of woodlands or in planting up waste lands are furnished with the following application blank : —

TOWN OR CITY

DATE

1. The State Forester, in order to collect information for a survey of the forest resources of the Commonwealth of Massachusetts, to spread a knowledge of practical forestry therein, and to improve the forest conditions thereof, agrees to examine and report on the lands of \_\_\_\_\_, in the county of \_\_\_\_\_, situated and described as follows :

2. The owner agrees to pay the travelling and subsistence expenses of the State Forester and his assistants while making such examination in a sum not to exceed \_\_\_\_\_ dollars, and agrees to deposit that sum with the State Forester on or before \_\_\_\_\_

3. The owner agrees that the State Forester may publish, for the objects named in the first paragraph of this application, the information gained while making said examination.

4. This application may be cancelled by either party upon ten days' notice.

Signed

*Owner or Trustee*

Boston, Mass.

The above application is accepted and placed on file, to be taken up in its proper order.

Signed

*State Forester*

N.B. — Any unexpended balance, together with an itemized statement of expenses, will be promptly returned.

On January 1st, 46 applications for practical assistance had been received. The lands upon which advice has been given lie in all parts of the State, and amount to 6,545 acres. There are ten applications on file, which will be taken up as soon as other duties will permit.

It is doubtful whether the State can hold open such an offer for more than a few years. But for the present, when forestry is so little understood, and a continued supply of

lumber means so much to the industries that use wood, — and nearly all of them do use it in some form, — the State can well afford to make such an offer, on account of the educational value that such work has. A well-managed wood lot in a community is a force tending to encourage others in the same community to treat their wood lots in like manner.

#### *Co-operation between State and Federal Forest Service*

A plan of co-operation between the State Forester's office and the United States Bureau of Forestry was arranged in 1904, and submitted to the Governor and Council for temporary approval. Later the plan was submitted to the General Court, and, being accepted, has become a part of the State's forest policy. The plan calls for an interchange of useful information, and for co-operation in the collection and tabulation of forest data. It also provides against a duplication of work by the State or the United States.

#### *Publications*

This office has authority to publish useful information on forestry, and to distribute it to those interested. At this writing three leaflets and four bulletins have been published, making in all 17,600 pamphlets.

Nearly every wood lot has some features in common with many other wood lots, and when a working plan is made for one, some information is collected which many other owners can use; so, other publications will be issued from time to time as investigations progress.

### PART III

#### SOME IMPORTANT WOODLAND PROBLEMS

The principal points in the State's forest policy have been touched on. There remain to be considered some matters that bear a close relation to the forest interests of the Commonwealth, although they are not directly connected with the State's forest policy.

*State Forests*

The Commonwealth ought to extend its policy of park reservation to include genuine State forests. The reservations that have been made so far are distinctly for park purposes. There are, however, considerable areas in these reservations that could be used for timber growing. Portions of the Middlesex Fells and the Blue Hills reservations might be so utilized without any reduction in their value as parks; on the contrary, their park features would be enhanced. The same might be said of the Mount Wachusett, Mount Tom, and Greylock reservations, the Province Lands on the Cape, and the land surrounding the Clinton Reservoir. The land about this reservoir is already being planted by the Metropolitan Water and Sewerage Board. The creation and maintenance of a forest cover on this watershed may be regarded as a kind of insurance against pollution of the water. The forest in the Mount Wachusett reservation is also being improved by the commission which has that reservation in charge. It is to be hoped that all of the boards and commissions having State lands under their charge will follow these good examples, and make the lands that the State owns as productive of forest supplies as is consistent with the purpose for which they were acquired.

But the lands mentioned are small in area, and the State might well follow the precedent established by several other States, and acquire lands for the specific purpose of growing timber on them. New York has a forest reserve of 1,439,988 acres, and Pennsylvania has acquired 700,000 acres for forest purposes.

In addition to their use for timber production, State forests may be used as recreation grounds by the people. It is a race instinct with us to love the forest and to delight in it. It is not necessary to have rows of Lombardy poplars, banks of flowering shrubbery, tortuous gravel walks, ornate bridges over artificial ponds, and "keep-off-the-grass" signs, in order to have a serviceable park. While all these things are good enough in their way, there are some of us who occasionally long for nature in her wild simplicity and ruggedness. We

